UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,903	09/12/2003	Haixiang He	120-161	8338

34845 7590 05/07/2008

Anderson Gorecki & Manaras LLP
33 NAGOG PARK
ACTON, MA 01720

EXAMINER
CHAI, LONGBIT

ART UNIT	PAPER NUMBER
2131	

NOTIFICATION DATE	DELIVERY MODE
05/07/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

handerson@smmalaw.com
officeadmin@smmalaw.com
cmorrissette@smmalaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/661,903	HE ET AL.	
	Examiner	Art Unit	
	LONGBIT CHAI	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *3/11/2008 for Terminal Disclaimer*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6-9 and 11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-9 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Currently pending claims are 1, 6 – 9 and 11.

Response to Arguments

2. Applicant's remarks with respect to the double patenting rejection have been fully considered in view of the Terminal Disclaimer filed 3/11/2008. The Terminal Disclaimer has been made in record and the double patenting rejection has been withdrawn.

3. Applicant's arguments with respect to the subject matter of the instant claims have been fully considered but are not persuasive.

4. As per claim 1, 9 and 11, Applicant asserts Caronni fails to describe applying a group security association associated with the private network to the tunneled packet to provide a secure tunneled packet because Applicant submits that (a) the Examiner's assertion that mappings between internal and external addresses is analogous to a GSA is fundamentally flawed because such a mapping is neither (a) encompassed by the description in the specification, nor (b) capable of providing any practical measure of security for communications and (c) Caronni describes providing security elsewhere, but only point-to-point security techniques which suffer the scalability problem discussed above (Remarks: Page 6 / Last sentence). Examiner respectfully disagrees with the following rationale:

- Regarding (a) – (b) Caronni teaches **a tunnel packet** is referred to encapsulating one packet inside another when packets are transferred between two entities to ensure that the communication between itself and enterprise network is secure in that it cannot be viewed by an interloper providing **security protection** such as **authentication header and**

key information for packet encryption / decryption (Caronni: Column 2 Line 27 – 33, Column 4 Line 38 – 52 and Column 12 Line 50 – 52 & Figure 6 / 2B).

- Regarding (c) Caronni teaches establishing a "Supernet," which is a private network that uses components from a public-network infrastructure so a user may plug their device into the Internet from virtually any portal in the world and still be able to use the resources of their private network in a secure and robust manner (Caronni: Column 4 Line 38 – 51) where any type of delivery scheme may be assigned to any address or **group of addresses** and the virtual network also maintains secure communications between nodes, while providing the flexibility of assigning delivery methods independent of the delivery address (Caronni: Column 3 Line 22 – 26 / Column 4 Line 58 – 60 and Column 7 Line 5 – 33).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 6 – 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (U.S. Patent 2002/0154635), which incorporates the reference of **Caronni** et al. (U.S. Patent 6,970,941) as shown in (Liu: Para [0002]), in view of Shimbo et al. (U.S. Patent 6,185,680).

As per claim 1 and 9, Liu teaches a method of securing packet data transferred between a first and second member of a private network coupled to client edge devices over a backbone comprising a plurality of provider devices including provider edge devices (Liu: Figure 3 / Element 324: a router device to interconnect between a VPN private network and a public network is qualified as one type of edge devices), the backbone operating according to a routing protocol (Caronni : Column 2 Line 14 – 35 and Column 4 Line 38 – 52: "tunneling" refers to encapsulating one packet inside another when packets are transferred between two end points to ensure that the communication between itself and enterprise network is secure in that it cannot be viewed by an interloper), the method comprising the steps of:

encapsulating a private address of a packet from the first member with a group header including a public address associated with the first member and a group address to generate a tunneled packet (Caronni : Figure 2B & 6 / Element 640, Column 2 Line 30, Column 7 Line 10 – 20, Column 4 Line 40 – 60 and Column 6 Line 6 – 8: Caronni teaches a Supernet is indeed a private network that has its own internal addressing scheme (Caronni: Column 6 Line 8 – 10) and a Supernet ID is included in the packet transformation qualified as a Group ID / address and the real IP address is the public address);

transforming, at a client edge device (Liu: Figure 3 / Element 324: a router device to interconnect between a VPN private network and a public network is qualified as one type of edge devices), the tunneled packet by first applying a group security association associated with the private network to the tunneled packet to provide a secure tunneled packet and then adding a header field the secure tunneled packet (Caronni: Column 2 Line 27 – 33, Column 4 Line 38 – 52 and Column 12 Line 50 – 52 & Figure 6 / 2B and Column 3 Line 22 – 26 / Column 4 Line 58 – 60 and Column 7 Line 5 – 33: (a) Caronni teaches a tunnel packet is referred to encapsulating one packet inside another when packets are transferred between two entities to ensure that the

communication between itself and enterprise network is secure in that it cannot be viewed by an interloper providing security protection such as authentication header and key information for packet encryption / decryption and (b) Caronni teaches establishing a "Supernet," which is a private network that uses components from a public-network infrastructure so a user may plug their device into the Internet from virtually any portal in the world and still be able to use the resources of their private network in a secure and robust manner (Caronni: Column 4 Line 38 – 51) where any type of delivery scheme may be assigned to any address or group of addresses and the virtual network also maintains secure communications between nodes, while providing the flexibility of assigning delivery methods independent of the delivery address), the added header field including a gateway address (**See Simbo below**) associated with the first member of the private network and a destination address of the second member of the private network to provide a client transformed packet (Caronni : Column 7 Line 5 – 33, Column 3 Line 17 – 21 and Column 11 Line 37 – 43: (a) the mappings of the internal / private address, known as node ID, which is considered as a part of the group security association and the Supernet contains a modification to the IP packet format that can be used to separate network behavior from addressing and besides, the security association (SA) is related to Authentication Header (AH) and (b) the Supernet contains a modification to the IP packet format that can be used to separate network behavior from addressing or the destination address becomes the real public-network destination address w.r.t the routing protocol of the backbone).

However, Caronni does not disclose explicitly the added header field including a gateway address.

Shimbo teaches the added header field including a gateway address (Shimbo: Column 26 Line 28 – 36 & Caronni : Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6 and Column 12 Line 11 – 19, Column 6 Line 8 – 10 Figure 2B : (a) Shimbo teaches appending a

gateway source address with the source address of the packet to the second portion (Shimbo: Column 26 Line 28 – 36 & Caronni : Figure 2B & Column 12 Line 11 – 19) and (b) Caronni teaches a Supernet is indeed a private network that has its own internal addressing scheme (Caronni: Column 6 Line 8 – 10) and a Supernet ID is included in the packet transformation qualified as a Group ID (Caronni: Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Shimbo within the system of Liu because (a) Liu teaches a mechanism to extend private networks onto a public infrastructure (Liu: Para [0015] and [0018]) / Caronni teaches modifying a IP packet format so that any type of delivery scheme may be assigned to any address or group of addresses (Caronni: Column 3 Line 19 – 25) and (b) Shimbo teaches providing an efficient, flexible and secured method to protect the data communication in any type of networks such as hierarchical organized or mobile computing environment by using a security gateway (Shimbo: Column 3 Line 39 – 50).

Liu / Caronni in view of Shimbo teaches:

forwarding the client transformed packet to a provider edge device (Liu: Figure 3: the router where a packet exits the shared IP public network is considered as the provider edge device); and

replacing, at the provider edge device, a destination field of the packet with a group identifier associated with the private network for routing the packet across the backbone (Shimbo: Column 26 Line 28 – 36 & Caronni : Figure 2B & Column 12 Line 11 – 19, Column 6 Line 8 – 10 and Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6 (a) Shimbo teaches appending a gateway source address with the source address of the packet to the second portion (Shimbo: Column 26 Line 28 – 36 & Caronni : Figure 2B & Column 12 Line 11 – 19) and (b) Caronni teaches a Supernet is indeed a private network that has its own internal addressing

scheme (Caronni: Column 6 Line 8 – 10) and a Supernet ID is included in the packet transformation qualified as a Group ID (Caronni: Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6).

As per claim 11, the claim limitations are met as the same reasons as that set forth in the paragraph above regarding to claim 1 with the exception of the feature a key table, the key table including a security association for each private network that the node is a member. However, Caronni teaches a key table, the key table including a security association for each private network that the node is a member (Caronni : Column 7 Line 5 – 33 : VARPDB stores the mappings of the internal / private address, known as node ID, which is considered as a part of key table).

As per claim 6, Caronni as modified teaches the group security association is associated with each member of the private network (Caronni : Column 7 Line 5 – 33, Column 3 Line 17 – 21 and Column 11 Line 37 – 43: VARPDB stores the mappings of the internal / private address, known as node ID, which is considered as part of a group security association).

As per claim 7, Caronni as modified teaches member of the private network registering with a global security server; the global security server forwarding the group security association to each member of the private network (Caronni : Column 7 Line 64 – 67: KMS = Key Management Server : generating a new key and forwarding to each member of the private network).

As per claim 8, Caronni as modified teaches the global security server periodically forwarding a new group security association to each member of the private network (Caronni : Column 12 Line 3: updated every ten seconds).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LONGBIT CHAI whose telephone number is (571)272-3788. The examiner can normally be reached on Monday-Friday 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Longbit Chai/
Longbit Chai Ph.D.
Primary Examiner, Art Unit 2131
4/24/2008